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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,796	06/27/2000	Kyeong Jin Kim	8733.20134	4009

7590 03/11/2002

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EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/604,796

Applicant(s)

KIM ET AL.

Examiner

Timothy L Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 2,8 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show items 3, 5, 6, 7, 9, and 11 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 2, 8, and 12 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 2 says the "frame has cell gap" which would be expected from claim 1.

Claim 8 has the recitation "frame has" but it fails to say what the dielectric frame of claim 1 has.

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Claim 12 has the recitation "frame has" but it fails to say what the dielectric frame of claim 9 has.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The utility and purpose of a third dielectric frame that is *wider* than the first and second dielectric frames, critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It is unclear how claim 7 could be enabled without the introduction of new matter. Correction is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. The term "third dielectric *frame*" in claims 1-7, and 9-11, are used by the claim to mean "a dielectric *convex portion*, e.g., *column*, or *pole*," while the accepted meaning is "An open structure or rim for encasing, holding, or bordering: a *structural frame*; the *frame of an LCD device* or, A closed, often rectangular border of a pixel or display area." For

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purposes of examination, "third dielectric frame" will be interpreted as - - third dielectric convex portion - - .

Claim 8 recites the limitation "said dielectric frame" in Claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the dielectric frame" in Claim 9. There is insufficient antecedent basis for this limitation in the claim.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 3-6, 9-11, and 13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-38 of copending Application No. 09/448,276 (CA) in view of Yamada et al (Yamada) USPAT 6,344,883.

This is a provisional obviousness-type double patenting rejection.

As to claim 1, CA discloses in claim 1 a multi-domain liquid crystal display device comprising: first and second substrates facing each other; a liquid crystal layer between said first and second substrates; a plurality of gate bus lines arranged in a first direction on said first substrate and a plurality of data bus lines arranged in a second direction on said first substrate to define a pixel region; a pixel electrode in said pixel region; a dielectric frame in a region other than a region where said pixel electrode is formed, said dielectric frame distorting electric field applied to said liquid crystal layer; a common electrode on said second substrate; and an alignment layer on at least one substrate between said first and second substrates.

CA does not explicitly disclose a second dielectric frame on another side of the pixel region and a third dielectric frame between the first dielectric frame and the second dielectric frame.

Yamada discloses in Figures 10A-10D (col. 19, line 40 through col. 27, line 35) a dielectric frame, 36, (OMR83, col. 26, lines 45-62) in a region other than a region where said pixel (pixel region in 10C) electrode is formed on one or both of the substrates (col.

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20, lines 8-12), said dielectric frame(s) distorting electric field applied to said liquid crystal layer (inherent to dielectric material, OMR83), and an alignment layer, 38a and 38b, on at least one substrate between said first and second substrates. Yamada also discloses in Figure 15 a centrally located dielectric convex portion, 69 (Applicant's third dielectric frame), (col. 26, lines 45-62).

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a first dielectric frame on one side of the pixel region; a second dielectric frame on another side of the pixel region; and a third dielectric frame between the first dielectric frame and the second dielectric frame to the LCD of CA to avoid a rough display in gray scales (col. 13, lines 36-46).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of CA with the Dielectric frames of Yamada.

As to claims 3 and 4, CA does not explicitly disclose the multi-domain liquid crystal display device wherein the third dielectric frame is expanded from the first substrate to the second substrate.

Yamada discloses in Figure 15 a third dielectric frame, 69, expanded from the first or second substrate (col. 26, lines 45-62).

Yamada does not explicitly disclose the third dielectric frame, 69, expanded to the opposite substrate, however, it is well known in the art of liquid crystals to use dielectric convex portions as spacer elements which expand to the opposite substrate.

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a the third dielectric frame expanded from the first substrate to the second substrate to control the liquid crystal orientation in a symmetrical pattern while providing support as a spacer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of CA with an expanded third dielectric frame of Yamada on either the first or second substrates.

As to claims 5 and 6, these are all obvious variations on the invention disclosed by CA in view of Yamada and are therefore not considered patentably distinct. If the applicant does not agree, a restriction might be appropriate.

As to claims 9-11, mere duplication of parts, relative claims 1-7, is not considered patentably distinct unless unexpected results are obtained.

As to claim 13, it is well known in the art of liquid crystals to divide a pixel into a plurality of independently driven regions in order to provide for a color display.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the



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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-6, 9-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of Yamada et al (Yamada) USPAT 6,344,883.

As to claim 1, APA discloses in Figure 1 and in the description of the related art, a multi-domain liquid crystal display device comprising: first and second substrates facing each other and having a pixel region and a liquid crystal layer between the first and second substrates (inherent).

APA does not explicitly disclose a first dielectric frame on one side of the pixel region; a second dielectric frame on another side of the pixel region; and a third dielectric frame between the first dielectric frame and the second dielectric frame.

Yamada discloses in Figures 10A-10D (col. 19, line 40 through col. 27, line 35) a dielectric frame, 36, (OMR83, col. 26, lines 45-62) in a region other than a region where said pixel (pixel region in 10C) electrode is formed on one or both of the substrates (col. 20, lines 8-12), said dielectric frame(s) distorting electric field applied to said liquid crystal layer (inherent to dielectric material, OMR83), and an alignment layer, 38a and 38b, on at least one substrate between said first and second substrates. Yamada also discloses in Figure 15 a centrally located dielectric convex portion, 69 (Applicant's third dielectric frame), (col. 26, lines 45-62).

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a first dielectric frame on one side of the

pixel region; a second dielectric frame on another side of the pixel region; and a third dielectric frame between the first dielectric frame and the second dielectric frame to the LCD of APA to avoid a rough display in gray scales (col. 13, lines 36-46).

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of APA with the dielectric frames of Yamada.

As to claims 3 and 4, APA does not explicitly disclose the multi-domain liquid crystal display device wherein the third dielectric frame is expanded from the first substrate to the second substrate.

Yamada discloses in Figure 15 a third dielectric frame, 69, expanded from the first or second substrate (col. 26, lines 45-62).

Yamada does not explicitly disclose the third dielectric frame, 69, expanded to the opposite substrate, however, it is well known in the art of liquid crystals to use dielectric convex portions as spacer elements which expand to the opposite substrate.

Yamada is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a the third dielectric frame expanded from the first substrate to the second substrate to control the liquid crystal orientation in a symmetrical pattern while providing support as a spacer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of APA with an expanded third dielectric frame of Yamada on either the first or second substrates.

As to claims 5 and 6, these are all obvious variations on the invention disclosed by APA in view of Yamada and are therefore not considered patentably distinct. If the applicant does not agree, a restriction might be appropriate.

As to claims 9-11, mere duplication of parts, relative claims 1-7, is not considered patentably distinct unless unexpected results are obtained.

As to claim 13, it is well known in the art of liquid crystals to divide a pixel into a plurality of independently driven regions in order to provide for a color display.

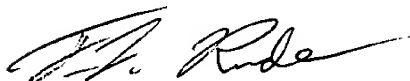
7. For convenience, Applicant may also review Lien USPAT 5,907,380; Colgan et al USPAT 6,256,080; Saito et al USPAT 6,304,308; and Horie et al USPAT 6,061,117.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7725 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude  
Examiner  
Art Unit 2871

TLR  
February 27, 2002



William L. Sikes  
Supervisory Patent Examiner  
Technology Center 2800